

**ABSTRACT**

The present invention is a treadmill comprising an electrical control panel (10), an armrest support (20) and a base frame (30). The armrest support (20) to which an armrest (22) is attached is mounted on the front of the base frame (30). The electrical control panel (10) is attached to the armrest (22). Left and right belt racks (40, 41) respectively having front and rear rollers (42, 44; 43, 45) attached to both ends of each belt rack (40, 41) are attached to the top of the base frame (30). A running belt (46, 47) is mounted around the front and rear rollers (42, 44; 43, 45) of each belt rack (40, 41) so that the running belt (46, 47) can move circularly. Furthermore, a support plate (48, 49) is attached to each belt rack (40, 41) to support the running belt (46, 47). A hydraulic cylinder (60) is pivotally located between the armrest support (20) and each belt rack (40, 41). The hydraulic cylinder (60) is composed of an actuating rod (601), a cushion (602), an adjusting ring (603), a rubber ring (604), a first external tube (605) and a securing rod (606). The hydraulic cylinder (60) further comprises a steel tube (607), a dust-proof gasket (608), a switching seat (609), a seal (610), a washer (611), a spring (612), a socket (613), an oil-adjusting element (614) and a cushioning device (615). By assembling the forgoing elements, a user can have a cushioning effect in use and easily assemble or disassemble the treadmill.

**FIELD OF THE UTILITY MODEL**

The present invention relates to a treadmill, and more particularly, to a treadmill equipped with a hydraulic cylinder has a cushioning effect.

**RELATED PRIOR ART**

In the structure of conventional treadmills as disclosed in U.S. Patent Nos. 5,441,468, 5,279,528, 5,454,772 and so on, the resilient elements are directly secured between a support plate and a belt rack. The cushioning effect of conventional

treadmills is good, but their resilient elements are directly subjected to force. After being used a period of time, the resilient elements themselves deteriorate and finally break down. Moreover, to change the resilient elements, the running belt and the support plate need to be disassembled.

As shown in Taiwan Patent Publication No. 226095, springs arranged in the base frame are provided to connect the sides of a support plate that supports a running belt. When a user runs on the running belt located on the support plate, the force exerted on the support plate is cushioned by the springs to achieve a cushioning effect. However, the drawback resides in that the structure disclosed in the Taiwan patent is rather unstable. Therefore, the user will feel uncomfortable and uneasy. In addition, the springs do not have a long life span.

#### SUMMARY OF THE UTILITY MODEL

The primary objective of the present invention is to provide a hydraulic cylinder (60) that is pivotally arranged between the armrest support (20) and each belt rack (40, 41). The hydraulic cylinder (60) is a cushioning element so that a user can run steadily, and the life-span of the treadmill can be prolonged.

To achieve the forgoing objective, the present invention provides a treadmill, which comprises an electrical control panel (10), an armrest support (20) and a base frame (30). The armrest support (20) to which an armrest (22) is attached is mounted on the front of the base frame (30). The electrical control panel (10) is attached to the armrest (22). Left and right belt racks (40, 41) respectively having front and rear rollers (42, 44; 43, 45) located at both ends of each belt rack (40, 41) are pivotally attached to the top of the base frame (30). A running belt (46, 47) is mounted around the front and rear rollers (42, 44; 43, 45) of each belt rack (40, 41) so that the running belt (46, 47) can move circularly. A support plate (48, 49) is attached to each belt rack (40, 41) to support the running belt (46, 47). A hydraulic cylinder (60) is pivotally located between the armrest support (20) and each belt rack (40, 41). The hydraulic cylinder (60) is

composed of an actuating rod (601), a cushion (602), an adjusting ring (603), a rubber ring (604), a first external tube (605) and a securing rod (606). The hydraulic cylinder (60) further comprises a steel tube (607), a dust-proof gasket (608), a switching seat (609), a seal (610), a washer (611), a spring (612), a socket (613), an oil-adjusting element (614) and a cushioning device (615).

### DETAILED DESCRIPTION

With reference to Fig. 1, the present invention is a treadmill and comprises an electrical control panel (10), an armrest support (20) and a base frame (30). The armrest support (20) to which an armrest (22) is attached is mounted on the front of the base frame (30). The electrical control panel (10) is attached to the armrest (22) to provide a user with information regarding the state of the treadmill. Left and right belt racks (40, 41) respectively having front and rear rollers (42, 44; 43, 45) located at both ends of each belt rack (40, 41) are attached to the top of the base frame (30). One end of respective rear rollers (44, 45) is attached to a supporting seat (50) that is mounted on the rear of the base frame (30). The other end of the rear rollers (44, 45) is attached to the corresponding right and left transmission devices (52, 54). A running belt (46, 47) is mounted around the front and rear rollers (42, 44; 43, 45) of each belt rack (40, 41) to have the running belt (46, 47) travel circularly. Furthermore, a support plate (48, 49) is attached to each belt rack (40, 41) to support the running belt (46, 47), and a hydraulic cylinder (60) is provided between the armrest support (20) and each belt rack (40, 41).

With reference to Fig. 2, the hydraulic cylinder (60) is composed of an actuating rod (601), a cushion (602), an adjusting ring (603), a rubber ring (604), a first external tube (605) and a securing rod (606). The hydraulic cylinder (60) further comprises a steel tube (607), a dust-proof gasket (608), a switching seat (609), a seal (610), a washer (611), a spring (612), a socket (613) an oil-adjusting element (614) and a cushioning device (615). By screwing a nut (616) onto the threaded part of the actuating rod (601), the cushioning device (615) is attached to the lower part of the actuating rod (601). In

addition, the lower part of the adjusting ring (603) is connected to a second external tube (617). A cap (618) is attached to the lower part of the second external tube (617). The upper part of the actuating rod (601) is pivotally connected to the armrest support (20), and the lower part of the securing rod (606) is pivotally connected to each belt rack (40, 41).

With reference to Fig. 3, each belt rack (40, 41) respectively has a transmission device (52, 54), front and rear rollers (42, 44; 43, 45), a running belt (46, 47) and a support plate (48, 49). The belt racks (40, 41) will alternatively move up and down while the user's legs exert force on the belt racks (40, 41). Therefore, the invention will make the user has more sense of reality as if he is running on a road than he runs on a conventional treadmill with only one belt rack. The purpose of the invention equipped with the hydraulic cylinder (60) is to achieve a cushioning effect and increase the sense of reality. A further purpose is to make the invention be disassembled more conveniently and retain the rigidity of the invention so that the user can stably run and the life span of the treadmill can be prolonged.

Although the invention has been explained in relation to its preferred embodiment, it is to be understood that many other possible modifications and variations can be made without departing from the spirit and scope of the invention as hereinafter claimed.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view of a treadmill in accordance with the present invention;

Fig. 2 is an exploded perspective view of a hydraulic cylinder of the treadmill in accordance with the present invention; and

Fig. 3 is a side plan view of the treadmill in accordance with the present invention.

#### BRIEF DESCRIPTION OF THE REFERENCE NUMERALS

(10) electrical control panel (20) armrest support (22) armrest

(30) base frame (40, 41) left and right belt racks

(42, 44; 43, 45) front and rear rollers (46, 47) running belt  
(48, 49) support plate (50) supporting seat  
(52, 54) right and left transmission devices  
(60) hydraulic cylinder  
(601) actuating rod (602) cushion (603) adjusting ring  
(604) rubber ring (605) first external tube (606) securing rod  
(607) steel tube (608) dust-proof gasket (609) switching seat  
(610) seal (611) washer (612) spring (613) socket  
(614) oil-adjusting element (615) cushioning device  
(616) nut (617) second external tube (618) cap

**CLAIMS:**

1. A treadmill comprising,
  - an electrical control panel (10);
  - an armrest support (20); and
  - a base frame (30);

wherein, the armrest support (20) to which an armrest (22) is attached is mounted on the front of the base frame (30), the electrical control panel (10) is attached to the armrest (22), left and right belt racks (40, 41) that respectively have front and rear rollers (42, 44; 43, 45) located at both ends of each belt rack (40, 41) are attached to the top of the base frame (30), a running belt (46, 47) is mounted around the front and rear rollers (42, 44; 43, 45) of each belt rack (40, 41) to have the running belt (46, 47) travel circularly, and a support plate (48, 49) is attached to each belt rack (40, 41) to support the running belt (46, 47);

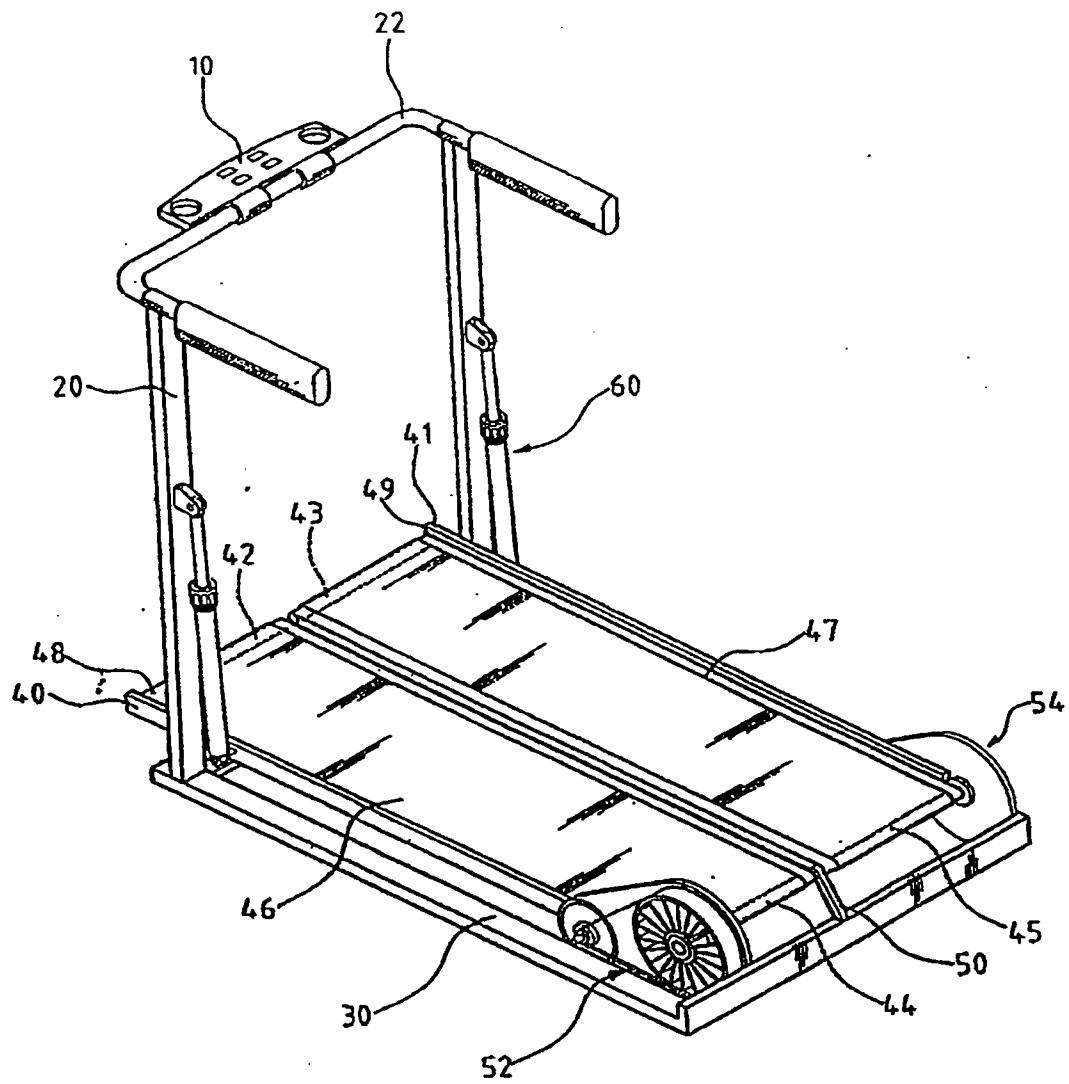
characterized in that

  - a hydraulic cylinder (60) is located between the armrest support (20) and each belt rack (40, 41); wherein,

the hydraulic cylinder (60) is composed of an actuating rod (601), a cushion (602), an adjusting ring (603), a rubber ring (604), a first external tube (605) and a securing rod (606);

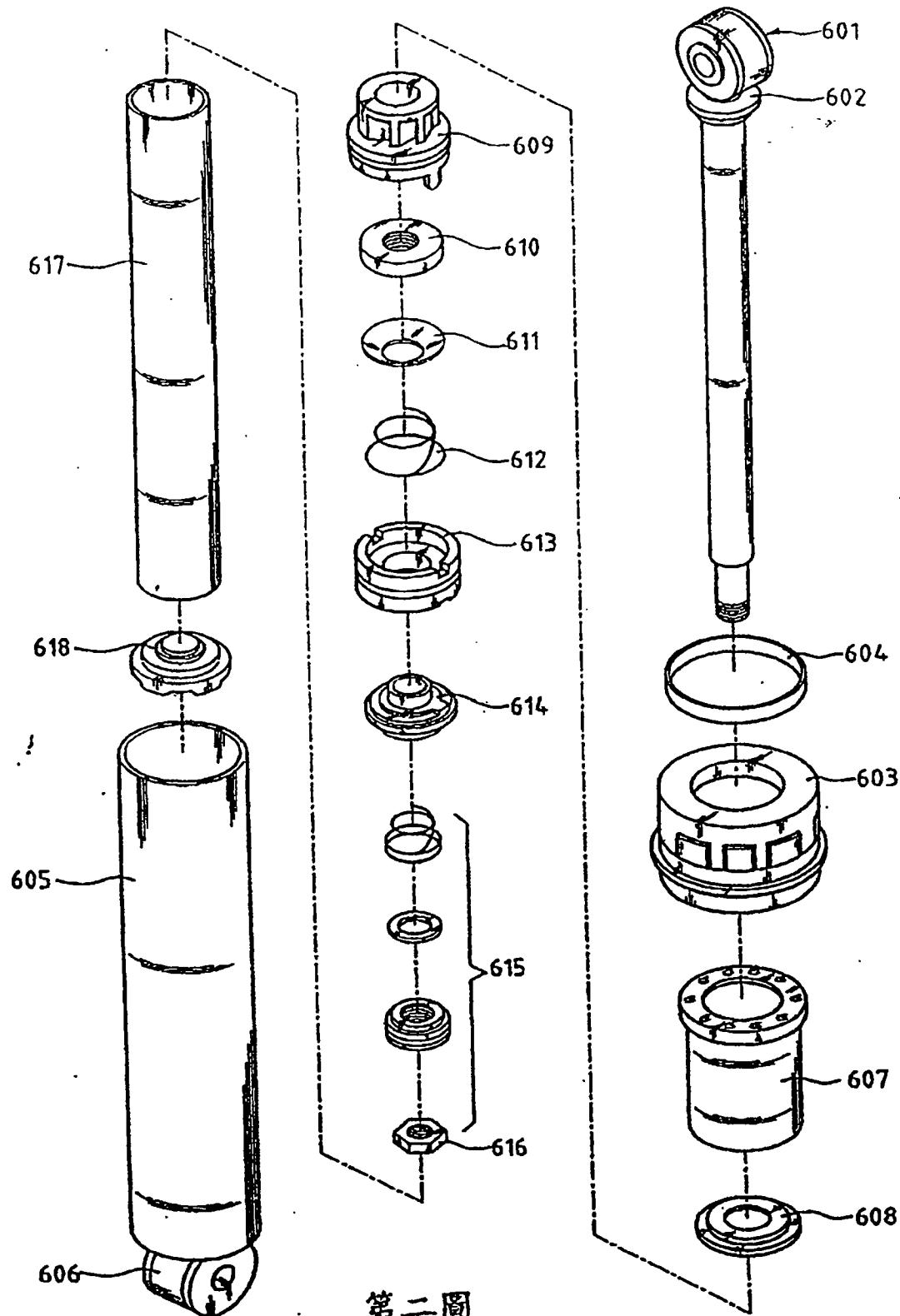
the hydraulic cylinder (60) further comprises a steel tube (607), a dust-proof gasket (608), a switching seat (609), a seal (610), a washer (611), a spring (612), a socket (613), an oil-adjusting element (614) and a cushioning device (615); and

the adjusting ring (603) is connected to a second external tube (617) and a cap (618) is provided to be mounted to the lower part of the second external tube (617), by means of assembling the foregoing elements, a user can achieve a cushioning effect during operation and easily assemble or disassemble the treadmill.



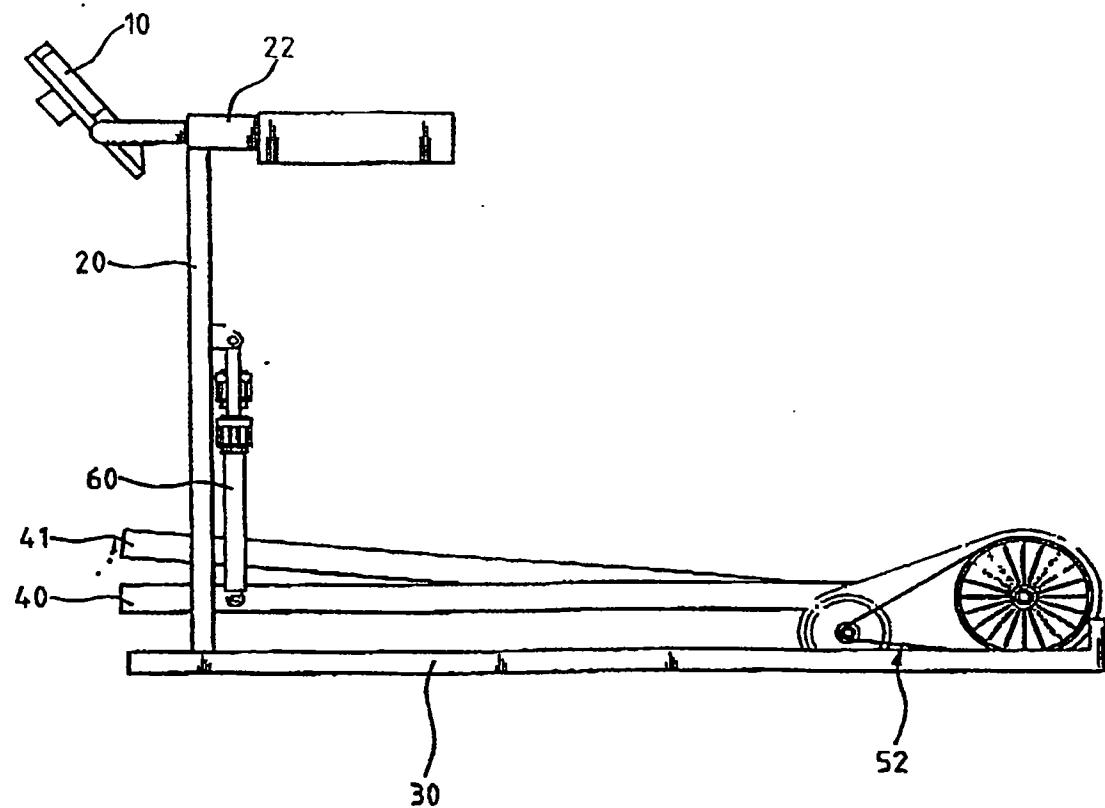
## 第一圖

Fig. 1



第二圖

Fig. 2



第三圖

Fig. 3

66-7123552

CM. 500TC  
 [50]名稱：跑步機  
 [21]申請案號：091218106  
 [72]創作人：  
 高中直  
 [71]申請人：  
 高中直  
 [74]代理人：石顯志先生

[22]申請日期：中華民國 91年 (2002) 11月 20日

臺北縣新莊市民安路三八七巷十九號

臺北縣新莊市民安路三八七巷十九號

黑  
漢

[37]申請專利範圍：

1. 一種跑步機，其包括一電子控制面板、一扶手架、一基座框，該扶手架係設於該基座框之前方，且該扶手架設有一扶手，該電子控制面板則設於該扶手之上，於該基座框上方設有左右兩帶架，該帶架分別平行橫設前後兩滾輪，左右兩後滾輪之一端同時橫接至位於該基座框後方之支撐座，另一端則分別橫接至左右兩傳動裝置，於前後兩滾輪間設一跑步帶，使該跑步帶可於其上循環運動，且於該帶架上設跑步板以支撐該跑步帶，其特徵在於：該扶手架與該帶架間橫設一油壓缸，該油壓缸係由一作動桿、緩衝

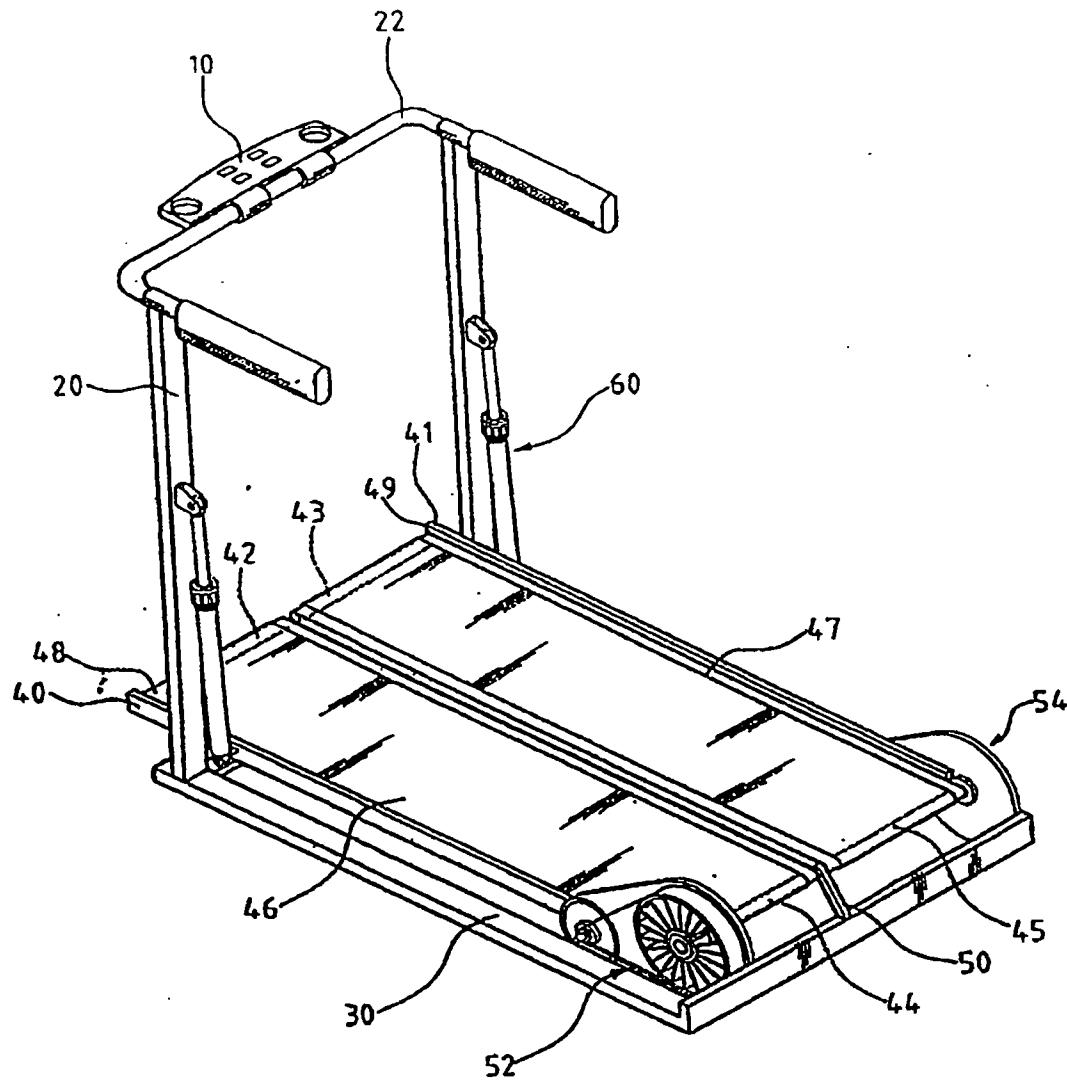
墊、調節環、橡膠環、外管及一固定桿所組成，並在其內之組成要件內尚包含鋼管、防塵套、選擇座、封蓋、墊片、彈簧、承接座及一油路調整座，而在之後則有著一組的緩衝裝置，另外，在該調節環之下半部連接有一外管，於該外管下方更設有一底座；藉由上述組合，可讓使用者於使用時得到緩衝作用，且易於組裝拆設。

圖式簡單說明：

圖一係為本創作之立體圖：

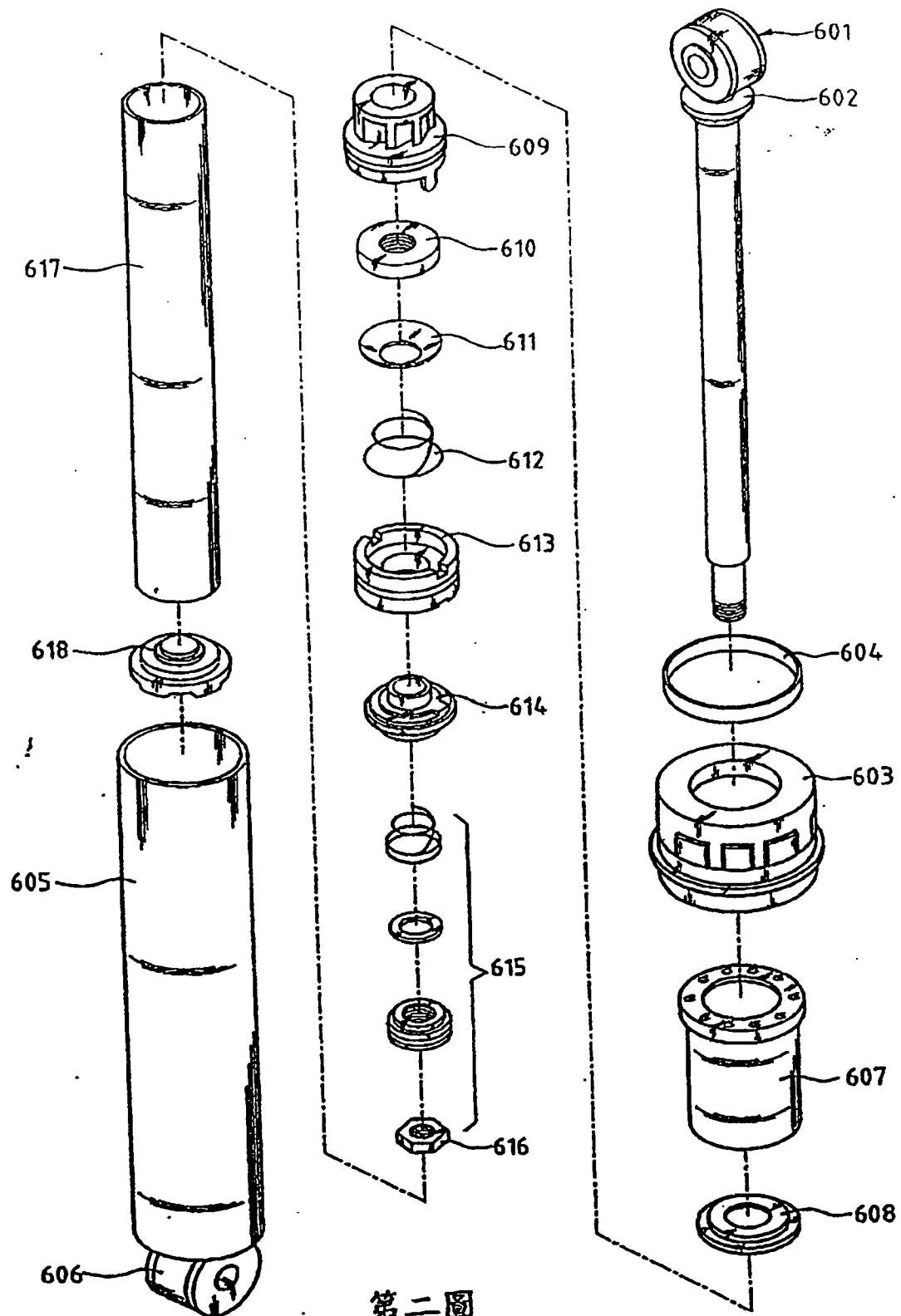
圖二係為本創作中油壓缸之分解圖：

圖三係為本創作之作動示意圖。



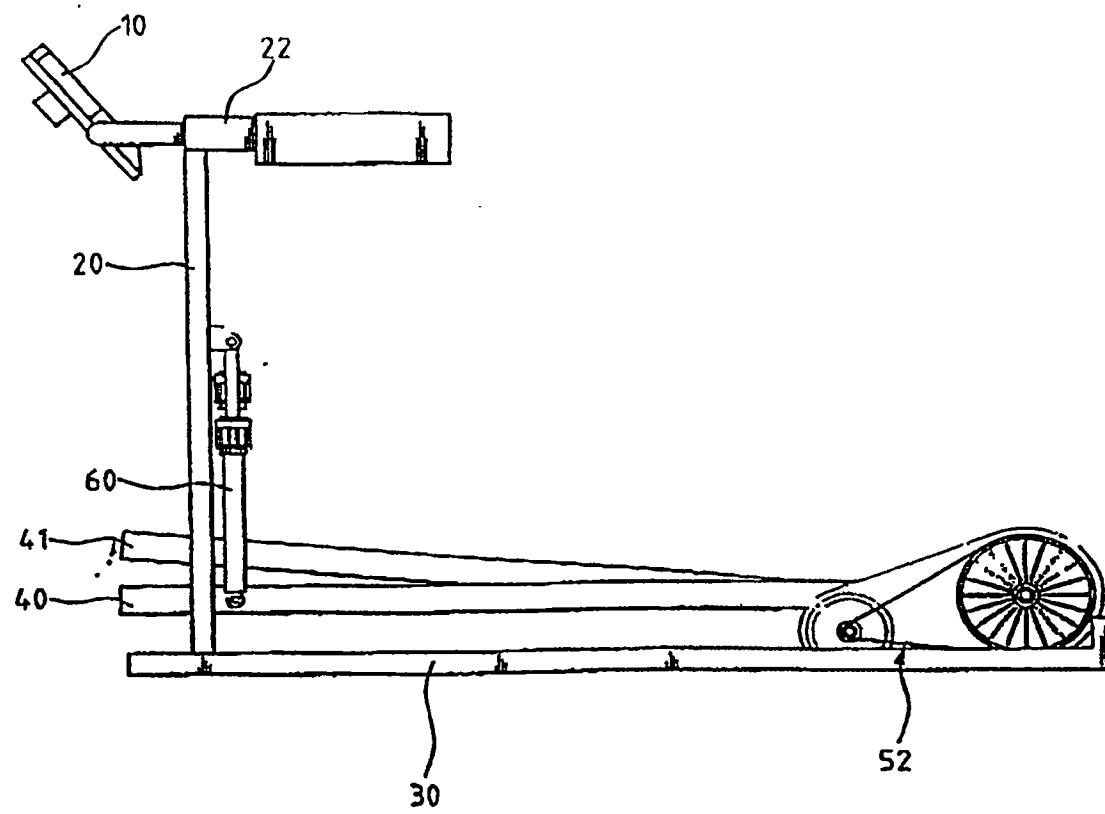
### 第一圖

Fig. 1



第二圖

Fig. 2



第三圖

Fig. 3